

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended): An apparatus for checking a link to a target hypertext database, said apparatus comprising:

a data processing unit; and

a storage device for storing information related to links,

wherein the data processing unit executes instructions for calculating scores based on the information related to links stored in said storage device, and detecting a logically mismatched link to said hypertext database based on said calculated scores.

2. (Previously presented): The apparatus for checking the link as set forth in claim 1, wherein said data processing unit executes instructions for detecting at least one of the following logically mismatched links:

a link having a mismatch between the hyperlink appearing on a source web page and a target web page;

a link having a mismatch between the hyperlink appearing on the source web page and a target web page having expired content;

a link having an inconsistent hyperlink appearing on multiple web pages;

a link having a different method of presenting an associated target web page than other links on the same web page or in the same website;

a link having a hyperlink that is not readily apparent to a user; and

a link that forms a loop with other links relating to a similar topic.

3. (Currently amended): An apparatus for checking a link, said apparatus comprising:
an information storing unit which stores information about links; and
a condition detecting unit which executes instructions for calculating scores based on the information related to links stored in said storage device, and detecting a logically mismatched link based on said calculated scores.

4. (Previously presented): The apparatus for checking a link as set forth in claim 3, further comprising an information collecting unit which collects said information about the links stored by said information collecting unit.

5. (Previously presented): The apparatus for checking a link as set forth in claim 3, further comprising a candidate providing unit which provides a correction candidate related to the logically mismatched link detected by said condition detecting unit, wherein the correction candidate includes information for correcting the link information of the mismatched link.

6. (Withdrawn): The apparatus for checking a hypertext as set forth in claim 5, further comprising an importance calculating unit which calculates importance value of said part including the logically mismatched link detected by said condition detecting unit.

7. (Previously presented): The apparatus for checking a link as set forth in claim 5, further comprising a correction reflecting unit which corrects the logically mismatched link.

8. (Withdrawn): The apparatus for checking a hypertext as set forth in claim 6, further comprising a total score calculating unit which calculates a total score related to said hypertext based on at least one of factors including: the importance value calculated by said importance calculating unit, the number of said parts detected by said condition detecting unit, and the rate of the number of said part detected by said condition detecting unit corresponding to the total number of the links.

9. (Withdrawn): The apparatus for checking a hypertext as set forth in claim 3, further comprising an importance calculating unit which calculates the importance value of the part including the logically mismatched link detected by said condition detecting unit.

10. (Withdrawn): The apparatus for checking a hypertext as set forth in claim 9 further comprising a total score calculating unit which calculates a total score related to said hypertext based on at least one of factors including: the importance value calculated by said importance calculating unit, the number of said parts detected by said condition detecting unit, and the rate of the number of said part detected by said condition detecting unit corresponding to the total number of the links.

11. (Previously presented): The apparatus for checking a link as set forth in claim 3, wherein said condition detecting unit divides said information about the links into groups in accordance with a predetermined condition and detects a subgroup of the groups that includes the logically mismatched link.

12. (Previously presented): The apparatus for checking a link as set forth in claim 3, wherein said condition detecting unit detects a link having a mismatch between the link and a target web page.

13. (Currently amended): An ~~The~~ apparatus for checking a link ~~as set forth in claim 3,~~
said apparatus comprising:

an information storing unit which stores information about links; and
a condition detecting unit which executes instructions for detecting a logically
mismatched link,

wherein said condition detecting unit calculates criteria scores of the links based on at least one of the following scores and detects the link with the highest criteria score as said logically mismatched link, said scores including:

a first score calculated by comparing the hyperlinks of links having the same target web page;

a second score calculated by comparing the target web pages of links having identical hyperlinks;

a third score calculated by comparing the target web pages of a plurality of links having the same source web page and identical hyperlinks; and

a fourth score calculated by comparing contents of a hyperlink and contents of a target web page.

14. (Previously presented): The apparatus for checking a link as set forth in claim 3, wherein said condition detecting unit detects a link having a mismatch between the hyperlink appearing on a source web page and a target web page having expired content.

15. (Canceled).

16. (Previously presented): The apparatus for checking a link as set forth in claim 3, wherein said condition detecting unit detects a link on multiple web pages having an inconsistent hyperlink appearing on the multiple web pages.

17. (Canceled).

18. (Previously presented): The apparatus for checking a link as set forth in claim 5, wherein said condition detecting unit divides said information about the links into groups including a major group and a minor group in accordance with a predetermined condition and detects said minor group as including the logically mismatched link.

19. (Currently amended): ~~The~~ An apparatus for checking a link ~~as set forth in claim 18,~~
said apparatus comprising:

an information storing unit which stores information about links;
a condition detecting unit which executes instructions for detecting a logically
mismatched link; and
a candidate providing unit which provides a correction candidate related to the logically
mismatched link detected by said condition detecting unit,

wherein the correction candidate includes information for correcting the link information
of the mismatched link,

wherein said condition detecting unit divides said information about the links into groups
including a major group and a minor group in accordance with a predetermined condition and
detects said minor group as including the logically mismatched link, and

wherein said candidate providing unit provides a correction candidate that makes said
minor group conform to said major group.

20. (Previously presented): The apparatus for checking a link as set forth in claim 5,
wherein said condition detecting unit detects a link having a mismatch between the link and a
target web page.

21. (Currently amended): ~~The~~ An apparatus for checking a link ~~as set forth in claim 5,~~
said apparatus comprising:

an information storing unit which stores information about links;

a condition detecting unit which executes instructions for detecting a logically
mismatched link; and

a candidate providing unit which provides a correction candidate related to the logically
mismatched link detected by said condition detecting unit,

wherein the correction candidate includes information for correcting the link information
of the mismatched link, and

wherein said condition detecting unit calculates criteria scores of the links based on at
least one of the following scores and detects the link with the highest criteria score as said
logically mismatched link, said scores including:

a first score calculated by comparing

the hyperlinks of links having the same target web page;

a second score calculated by comparing the target web pages of links having identical
hyperlinks;

a third score calculated by comparing the target web pages of a plurality of links having a
same source web page and identical hyperlinks; and

a fourth score calculated by comparing contents of a hyperlink and contents of a target
web page.

22. (Previously presented): The apparatus for checking a link as set forth in claim 21, wherein said candidate providing unit provides at least one of the following correction candidates including:

a first correction candidate for hyperlinks obtained by comparing the hyperlinks of links having the same target web page;

a second correction candidate for target web pages obtained by comparing the target web pages of links having identical hyperlinks;

a third correction candidate for target web pages obtained by comparing the target web pages of links having the same source web page and identical hyperlinks; and

a fourth correction candidate for hyperlinks obtained by comparing contents of a hyperlink and contents of a target web page.

23. (Previously presented): The apparatus for checking a link as set forth in claim 5, wherein said condition detecting unit detects a link having a mismatch between a hyperlink appearing on a source web page and a target web page having expired content.

24-25. (Canceled).

26. (Currently amended): ~~The~~ An apparatus for checking a link ~~as set forth in claim 5,~~
said apparatus comprising:

an information storing unit which stores information about links;

a condition detecting unit which executes instructions for detecting a logically
mismatched link; and

a candidate providing unit which provides a correction candidate related to the logically
mismatched link detected by said condition detecting unit,

wherein the correction candidate includes information for correcting the link information
of the mismatched link, and

wherein said condition detecting unit detects a link on multiple web pages having an
inconsistent hyperlink appearing on the multiple web pages, and

said candidate providing unit provides a correction candidate for the hyperlink by
comparing hyperlinks of links having the same target web page as that of said detected link.

27. (Canceled).

28. (Previously presented): The apparatus for checking a link as set forth in claim 4,
wherein said information collecting unit repeatedly collects said information about the links, and
said information storing unit stores said information collected at different times.

29. (Currently amended): ~~The~~ An apparatus for checking a link ~~as set forth in claim 28,~~
said apparatus comprising:

an information storing unit which stores information about links;

a condition detecting unit which executes instructions for detecting a logically
mismatched link; and

an information collecting unit which collects said information about the links stored by
said information collecting unit,

wherein said information collecting unit repeatedly collects said information about the
links, and said information storing unit stores said information collected at different times, and

wherein said condition detecting unit detects a link having a mismatch between a
hyperlink appearing on a source web page and a target web page by analyzing said information
and determining a change in the number of links during said times.

30-32. (Canceled).

33. (Withdrawn): The apparatus for checking a hypertext as set forth in claim 6, wherein
said importance calculating unit is operated to calculate importance value based on at least one
of the following factors including:

- (1) a sort of errors or unsuitability of the detected part detected by said condition
detecting unit;
- (2) accuracy of errors or unsuitability of said detected part;
- (3) the number of links which is connected to the page including said detected part;

- (4) a record of frequency of access to the page including said detected part; and
- (5) a stratification level in the hypertext of the page including said detected part.

34. (Withdrawn): The apparatus for checking a hypertext as set forth in claim 6, wherein said importance calculating unit is operated to calculate the importance value of the detected part detected by said condition detecting unit, and to control output condition for said detected part in accordance with said importance value, said output condition including the number of outputting said detected part or a method of outputting said detected part.

35. (Currently amended): ~~The~~ An apparatus for checking a link ~~as set forth in claim 4,~~
said apparatus comprising:

an information storing unit which stores information about links;
a condition detecting unit which executes instructions for detecting a logically
mismatched link; and
an information collecting unit which collects said information about the links stored by
said information collecting unit,

wherein said information collecting unit extracts character strings corresponding to hyperlinks of said links through character recognition when the hyperlinks are images and registers said extracted character strings as said information about the links in said information storing unit.

36. (Previously presented): The apparatus for checking a link as set forth in claim 1, wherein said data processing unit executes instructions for checking a link to a target website.

37. (Previously presented): The apparatus for checking a link as set forth in claim 3, wherein a link to a target website is checked.

38. (Previously presented): A method of checking a link in a database comprising:
accepting a condition for detecting a link, said link including a logical mismatch in an associated hyperlink appearing on the source web page;
detecting said link based on said condition;
displaying, on a display screen, a result of the detection as a list with at least three items including:
the associated hyperlink;
identification information about the source web page of said link; and
identification information about a target web page of said link.

39. (Previously presented): The method of checking a link in a database as set forth in claim 38, wherein said list is sorted by having one of said at least three items as a key.

40. (Previously presented): The method of checking a link in a database as set forth in claim 38 further comprising:

accepting a correction candidate for said at least three items; and
correcting said link in accordance with said correction candidate.

41. (Previously presented): The method of checking a link in a database as set forth in claim 38, further comprising specifying a database.

42-44. (Canceled).

45. (Currently amended): A computer usable storage medium having stored therein a computer program for causing said computer to perform a method of checking a link in a database, said program including computer executable instructions for performing steps comprising:

storing information about links;
calculating scores based on the stored information about links; and
detecting a logically mismatched link based on the calculated scores.

46. (Currently amended): A computer-readable medium having stored therein a computer program for causing said computer to perform a method of checking a link in a database, said program including computer executable instructions for performing steps comprising:

collecting information about links and storing said information in an information storing unit;

calculating scores based on the stored information about links; and

detecting a logically mismatched link based on the calculated scores.

47. (Previously presented): The computer readable medium having stored therein a program as defined in claim 46, wherein said program further includes computer executable instructions for performing steps comprising providing a correction candidate related to the logically mismatched link.

48. (Withdrawn): The computer program product as set forth in claim 47, wherein said computer readable code includes a cord for having said computer serve as an importance calculating unit which calculates importance value of said part including the logically mismatched link detected by said condition detecting unit.

49. (Previously presented): The computer readable medium having stored therein a program as defined in claim 47, wherein said program further includes computer executable instructions for performing steps comprising correcting the logically mismatched link.

50. (Withdrawn): The computer program product as set forth in claim 48, wherein said computer readable code includes a cord for having said computer serve as a total score calculating unit which calculates a total score related to said hypertext based on at least one of factors, said factors including the importance value calculated by said importance calculating unit, the number of said parts detected by said condition detecting unit, and the rate of the number of said part detected by said condition detecting unit corresponding to the total number of the links.

51. (Withdrawn): The computer program product as set forth in claim 45, wherein said computer readable code includes a cord for having said computer serve as an importance calculating unit which calculates the importance value of the part including the logically mismatched link detected by said condition detecting unit.

52. (Withdrawn): The computer program product as set forth in claim 51, wherein said computer readable code includes a cord for having said computer serve as a total score calculating unit which calculates a total score related to said hypertext based on at least one of factors, said factors including the importance value calculated by said importance calculating unit, the number of said parts detected by said condition detecting unit, and the rate of the number of said part detected by said condition detecting unit corresponding to the total number of the links.

53. (Previously presented): The computer usable storage medium having stored therein a computer program as defined in claim 45, wherein said program further includes computer executable instructions for performing steps comprising dividing said information about the links into groups in accordance with a predetermined condition and detecting a subgroup of the groups that includes the logically mismatched link.

54. (Previously presented): The computer usable storage medium having stored therein a computer program as defined in claim 45, wherein said program further includes computer executable instructions for performing steps comprising detecting a link having a mismatch between the link and a target web page.

55. (Currently amended): ~~The~~ A computer usable storage medium having stored therein a computer program ~~as defined in claim 45;~~ for causing said computer to perform a method of checking a link in a database, said program including computer executable instructions for performing steps comprising:

storing information about links;

detecting a logically mismatched link; and

~~wherein said program further includes computer executable instructions for performing steps comprising~~ calculating criteria scores of the links based on at least one of the following scores and detecting the link with the highest criteria score as said logically mismatched link, said scores including:

a first score calculated by comparing link source descriptions of a plurality of the
hyperlinks of links having a same target web page;

a second score calculated by comparing the target web pages of a plurality of links
having identical hyperlinks;

a third score calculated by comparing the target web pages of a plurality of links having a
same source web page and identical hyperlinks; and

a fourth score calculated by comparing contents of a hyperlink and contents of a target
web page.

56. (Previously presented): The computer usable storage medium having stored therein a
computer program as defined in claim 45,

wherein said program further includes computer executable instructions for performing
steps comprising detecting a link having a mismatch between a hyperlink appearing on a source
web page and a target web page having expired content, .

57. (Canceled).

58. (Currently amended): ~~The~~ A computer usable storage medium having stored therein a computer program ~~as defined in claim 45~~, for causing said computer to perform a method of checking a link in a database, said program including computer executable instructions for performing steps comprising:

storing information about links;

detecting a logically mismatched link; and

~~wherein said program further includes computer executable instructions for performing steps comprising~~ detecting a link on multiple web pages having an inconsistent hyperlink appearing on the multiple web pages.

59. (Canceled).

60. (Previously presented): The computer readable medium having stored therein a program as defined in claim 47, wherein said program further includes computer executable instructions for performing steps comprising dividing said information about the links into groups including a major group and a minor group in accordance with a predetermined condition and detecting said minor group as including the logically mismatched link.

61. (Currently amended): ~~The~~ A computer readable medium having stored therein a program ~~as defined in claim 60, for causing said computer to perform a method of checking a link in a database, said program including computer executable instructions for performing steps comprising:~~

collecting information about links and storing said information in an information storing unit;

detecting a logically mismatched link;

providing a correction candidate related to the logically mismatched link;

dividing said information about the links into groups including a major group and a minor group in accordance with a predetermined condition and detecting said minor group as including the logically mismatched link; and

~~wherein said program further includes computer executable instructions for performing steps comprising providing a correction candidate that makes said minor group conform to said major group.~~

62. (Previously presented): The computer readable medium having stored therein a program as defined in claim 47, wherein said program further includes computer executable instructions for performing steps comprising detecting a link having a mismatch between the link and a target web page.

63. (Currently amended): ~~The~~ A computer readable medium having stored therein a program ~~as defined in claim 47, for causing said computer to perform a method of checking a link in a database, said program including computer executable instructions for performing steps comprising:~~

collecting information about links and storing said information in an information storing unit;

detecting a logically mismatched link;

providing a correction candidate related to the logically mismatched link; and

~~wherein said program further includes computer executable instructions for performing steps comprising~~ calculating criteria scores of the links based on at least one of the following scores and detecting the link with the highest criteria score as said logically mismatched link, said scores including:

a first score calculated by comparing the hyperlinks of links having the same target web page;

a second score calculated by comparing the target web pages of links having identical hyperlinks;

a third score calculated by comparing the target web pages of a plurality of links having a same source web page and identical hyperlinks; and

a fourth score calculated by comparing contents of a hyperlink and contents of a target web page.

64. (Previously presented): The computer readable medium having stored therein a program as defined in claim 63, wherein said program further includes computer executable instructions for performing steps comprising providing at least one of the following correction candidates, said correction candidates including:

a first correction candidate for hyperlinks obtained by comparing the hyperlinks of links having the same target web page;

a second correction candidate for target web pages obtained by comparing the target web pages of links having identical hyperlinks;

a third correction candidate for target web pages obtained by comparing the target web pages of links having the same source web page and identical hyperlinks; and

a fourth correction candidate for hyperlinks obtained by comparing contents of a hyperlink and contents of a target web page.

65. (Previously presented): The computer readable medium having stored therein a program as defined in claim 47, wherein said program further includes computer executable instructions for performing steps comprising detecting a link having a mismatch between a hyperlink appearing on a source web page and a target web page having expired content.

66-67. (Canceled).

68. (Currently amended): ~~The~~ A computer readable medium having stored therein a program ~~as defined in claim 47, for causing said computer to perform a method of checking a link in a database, said program including computer executable instructions for performing steps comprising:~~

collecting information about links and storing said information in an information storing unit;

detecting a logically mismatched link;

providing a correction candidate related to the logically mismatched link;

~~wherein said program further includes computer executable instructions for performing steps comprising~~ detecting a link on multiple web pages having an inconsistent hyperlink appearing on the multiple web pages; ~~and~~

providing a correction candidate for the hyperlink by comparing hyperlinks of links having the same target web page as that of said detected link.

69. (Canceled).

70. (Previously presented): The computer readable medium having stored therein a program as defined in claim 46, wherein said program further includes computer executable instructions for performing steps comprising repeatedly collecting said information about the links, and storing said information collected at different times.

71. (Currently amended): ~~The~~ A computer readable medium having stored therein a program ~~as defined in claim 70, for causing said computer to perform a method of checking a link in a database, said program including computer executable instructions for performing steps comprising:~~

collecting information about links and storing said information in an information storing unit;

detecting a logically mismatched link;

repeatedly collecting said information about the links, and storing said information collected at different times; and

~~wherein said program further includes computer executable instructions for performing steps comprising~~ detecting a link having a mismatch between a hyperlink appearing on a source web page and a target web page by analyzing said information and determining a change in the number of links during said times.

72-74. (Canceled).

75. (Withdrawn): The computer program product as set forth in claim 48, wherein said importance calculating unit is operated to calculate importance value based on at least one of the following factors including:

(1) a sort of errors or unsuitability of the detected part detected by said condition detecting unit;

(2) accuracy of errors or unsuitability of said detected part;

- (3) the number of links which is connected to the page including said detected part;
- (4) a record of frequency of access to the page including said detected part; and
- (5) a stratification level in the hypertext of the page including said detected part.

76. (Withdrawn): The computer program product as set forth in claim 48, wherein said importance calculating unit is operated to calculate the importance value of the detected part detected by said condition detecting unit, and to control output condition for said detected part in accordance with said importance value, said output condition including the number of outputting said detected part or a method of outputting said detected part.

77. (Currently amended): ~~The~~ A computer readable medium having stored therein a program ~~as defined in claim 46, for causing said computer to perform a method of checking a link in a database, said program including computer executable instructions for performing steps comprising:~~

collecting information about links and storing said information in an information storing unit;

detecting a logically mismatched link; and

~~wherein said program further includes computer executable instructions for performing steps comprising~~ extracting character strings corresponding to hyperlinks of said links through character recognition when the hyperlinks are images and registering said extracted character strings as said information about the links in said information storing unit.

78. (Previously presented): The computer usable storage medium having stored therein a computer program as defined in claim 45, wherein said program further includes computer executable instructions for performing steps comprising checking a link to a target website.

79. (Previously presented): The computer readable medium having stored therein a program as defined in claim 46, wherein said program further includes computer executable instructions for performing steps comprising checking a link to a target website.